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Different Paths of Inupiat Men and Women in the Wage Economy

Introduction

This *Review* examines the response of the North Slope Inupiat to the employment opportunities created through oil development. These jobs resulted not so much from direct oil field activities at Prudhoe Bay as from the formation of the North Slope Borough government in 1972. The borough transformed oil property tax revenues into local jobs adapted to contemporary Inupiat life styles.

The North Slope Borough government encompasses eight Inupiat villages, the Prudhoe Bay oil complex, and other major potential energy resources (Figure 1). Borough revenues grew from less than a million dollars in FY1973 to about $57 million in 1979.[1] The borough also launched a $511 million capital improvements program (CIP) to improve housing, educational facilities, roads, utilities, and sanitation on the North Slope. The CIP was designed to raise the standard of public facilities available to North Slope Inupiat to the level enjoyed by urban Alaskans, while at the same time providing employment for the Inupiat population.

Maximum local hire and the avoidance of union influence was a central consideration in borough construction contracting and long-term economic planning. Contractors hired local labor, and these employees were placed directly on the borough payroll. The borough was willing to absorb substantial cost overruns that partly resulted from the use of local labor rather than an experienced outside work force. "I wouldn't say the cost increase was caused by mismanagement on the part of [the construction firm building borough housing]," stated borough Mayor Eben Hopson in 1976, "but by the borough's policy of hiring local labor, which is to aid full employ-

[1] Gerald A. McBeath, *North Slope Borough Government and Policymaking* (Fairbanks: University of Alaska, Institute of Social and Economic Research, 1981); North Slope Borough Budget Document, FY 1979-1980.

This study is based primarily on a household survey conducted in 1977 by the Institute of Social and Economic Research (ISER) in cooperation with the North Slope Borough. The survey, for the most part, was conducted by trained Inupiat interviewers. The sample consisted of 290 Inupiat adults from Barrow and five major North Slope villages. Interviewers requested such information as the types of jobs the person held during the 1976-77 year, the person's subsistence activities that same year, education, and other background characteristics. The survey represents over 59 percent of North Slope Inupiat households and slightly over 20 percent of the North Slope Inupiat adult population in the communities surveyed.

Prior to the survey, anthropologist Rosita Worl, who was a two-year resident of Barrow, conducted lengthy semi-structured interviews on employment and subsistence with thirty North Slope Inupiat residents selected to represent different types of work adaptations. Results of the interviews suggested survey topics and provided qualitative information useful in interpreting survey results.

For a more detailed discussion of research methods and limitations as well as issues involved in measuring unemployment and labor force participation in the wage economy for rural Alaska, contact: Librarian, ISER, 707 A Street, Suite 206, Anchorage, Alaska 99501 (278-4621), and request appendices A, B, and C of ISER Report No. 50. These present, respectively, a discussion of methods used, issues involved in measuring labor force participation, and supplementary tables used in analyzing labor force participation.

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FEATURE

Judith Kleinfeld — Different Paths of Inupiat Men and Women in the Wage Economy: The North Slope Experience

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ment."[2] By 1979, the borough employed about 800 workers in government operations, education, and construction.[3] Such a workforce is substantial in a region with a village population of somewhat over 4,000, of which almost half are children.[4]

Organization of Report and Summary of Findings

The first section of this report examines the general effects of new job opportunities on the North Slope Borough's Inupiat population. It emphasizes the high level of Inupiat employment that occurred through the borough, as opposed to the oil industry. Through its local hire program, the North Slope Borough helped to raise cash income without increasing income inequity among the Inupiat population. The job opportunities created through the borough also avoided a potential crisis: how to absorb into the labor force the large population of Inupiat youth which was beginning to reach maturity in the 1970s.

The second section of this study examines the different responses of North Slope Inupiat men and women to job opportunities. Inupiat women surged into the labor force, continuing a historical process of increasing female labor force participation. Despite cultural differences, the labor force participation rate of Inupiat women, particularly young women, is similar to the national rate of female labor force participation. The majority of Inupiat women hold white collar jobs and their occupational structure generally resembles that of women nationally.

In comparison to national patterns, Inupiat men are adapting in culturally different ways to the wage economy. Their rates of labor force participation do not appear to have increased substantially, if at all, since the 1960s. Across all age groups, Inupiat male labor force participation rates in the wage economy are substantially lower than national norms. Inupiat men, however, are also active in the subsistence economy, and the young men appear to participate in major subsistence activities as much as the older generation. The occupational structure of Inupiat men also diverges from the national structure for males. The majority hold blue collar jobs, particularly in construction, which provide high wages and

[2]Quoted in Ray Brown, "The North Slope Borough: An Arctic Struggle," *The Anchorage Times*, October 17, 1976, B-7.

[3]*North Slope Borough, Alaska*, General Information and Economic Factors, Spring 1979. This estimate reflects budgeted positions and includes the North Slope Borough School District, which accounts for 358 employees.

[4]*Ibid.*; Jack Kruse, Judith Kleinfeld, and Robert Travis, *Energy Development and the North Slope Inupiat: A Quantitative Analysis of Social and Economic Change* (Fairbanks: University of Alaska, 1980), Table 3-1. Population figures tend to be unreliable and generally range between 4,000 and 5,000, not including military and industrial populations.

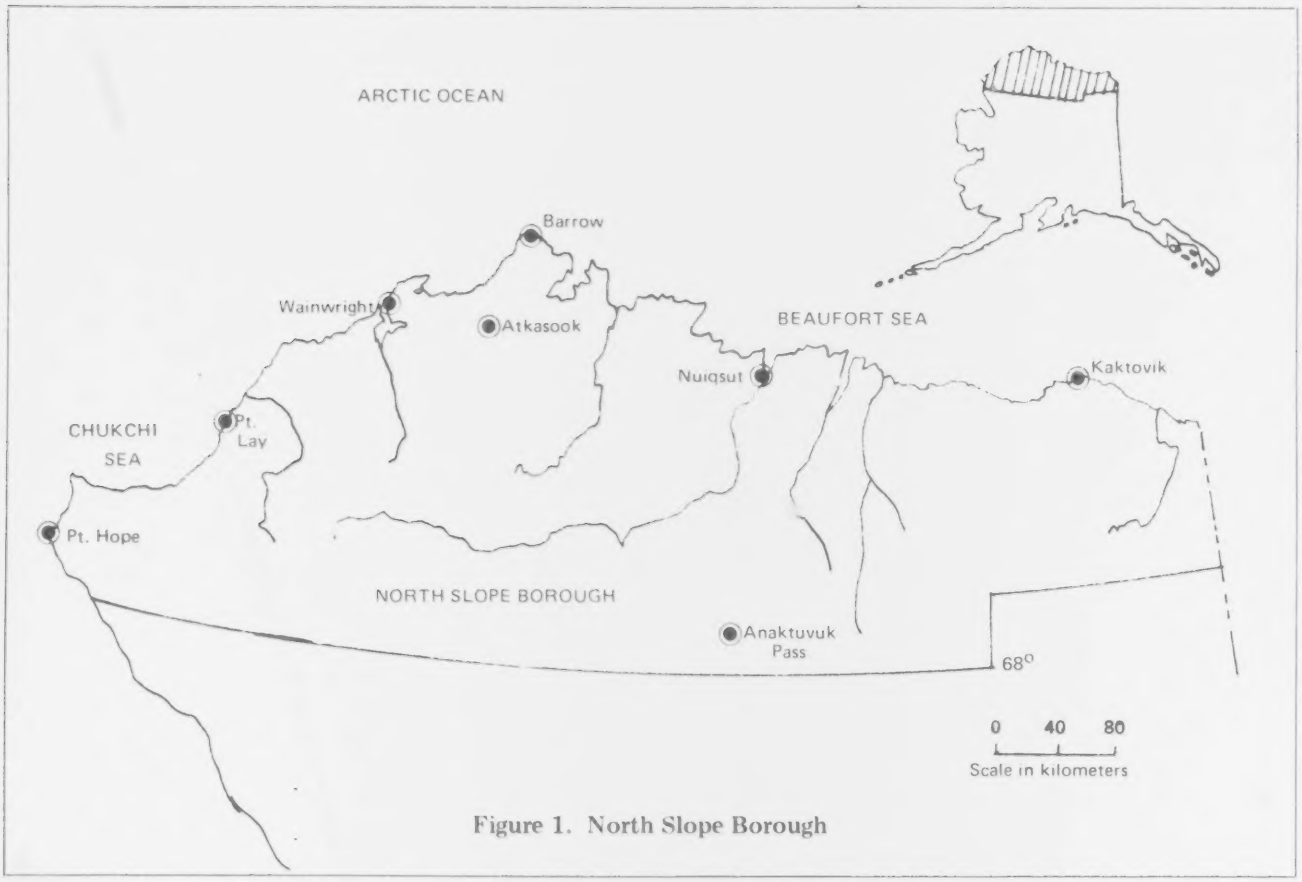

Figure 1. North Slope Borough

part-year work schedules. About half the Inupiat male population prefers part-year work to year-round employment.

The conclusion of this report discusses issues arising from the particular adaptations of Inupiat men and women to the wage economy. At least through the turn of the century, the borough's revenues and its ability to maintain local employment appear secure. Should a decline in borough revenues occur, however, Inupiat men, who are concentrated in less stable blue collar positions, may be hurt more than the women, who are concentrated in more secure white collar work. Second, in the current North Slope Borough economy, women, much more than men, have economic incentives for educational achievement. For men, the economic structure created by the borough generally does not support borough goals of increasing local skills and reducing dependency on trained outsiders. In addition, the wage economy has created significant changes in the roles of Inupiat women. New technology has diminished the need for women to provide support services to men in the subsistence economy. Inupiat women have assumed an important new economic role, providing regular cash income for household expenses and financing household activities in the subsistence sector.

Effects of the North Slope Borough's "Local Hire" Program on the Inupiat Population

Borough Employment Levels

Five years after it was established, the North Slope Borough was the largest employer of the local Inupiat population. Almost half of the jobs held by Inupiat adults in 1977 were with the borough government and the school district (Table 1). The borough had employed at some time 57 percent of the Inupiat adult population (Table 2). In contrast, the oil companies, during construction of the trans-Alaska oil pipeline and construction and operation of the Prudhoe Bay oil facility, had employed only 14 percent of Inupiat adults since 1970, and only 8 percent of these worked for longer than 12 weeks.[5]

[5]Jack Kruse, et al., *Energy Development and the North Slope Inupiat . . .*, 1980, Table 4-28.

Table 1. Employers[a] of North Slope Inupiat Adults, 18 or Over, by Village: 1977
(Percent Distribution)

Employer	Village						
	Barrow	Anaktuvuk	Kaktovik	Nuiqsut	Wainwright	Pt. Hope	All Villages
North Slope Borough	46%	52%	52%	67%	49%	55%	49%
Arctic Slope Regional Corporation	16	19	26	19	21	26	20
State/Federal Government	11	13	--	5	6	13	10
Local Government	6	--	4	--	6	2	4
Private Business[b]	21	16	18	9	18	4	17
Total	100%	100%	100%	100%	100%	100%	100%
(Total Jobs)	(136)	(31)	(23)	(21)	(49)	(46)	(306)

[a]Includes all jobs Inupiat adults held with the various employers from October 1976-September 1977.

[b]Private business includes Wien Air Alaska, oil and pipeline companies, and other commercial businesses. Those working for oil and pipeline companies made up a very small part of this category.

Source: ISER North Slope Survey, 1977, Questions 29b, 30b, 31c, 32c, 33c, 34a.

However, borough jobs did not succeed in eliminating unemployment among the North Slope Inupiat population. During 1976-77, unemployment among Inupiat adults in the primary working ages, 18-54, averaged 12 percent of the total male population and 8 percent of the total female population (Tables 3 and 4). In part, this unemployment occurred because borough employment did not last for long periods of time, due to both layoffs and work preferences of the work force, an issue later discussed. Inupiat women who were borough employees averaged 23 weeks of work, and Inupiat men, 17 weeks (Table 2).

Borough jobs were distributed with reasonable equity among men and women and across different age groups, at least in the primary working years. The borough employed somewhat higher proportions of younger workers, thus providing jobs for the large population of young adults entering the labor force (Table 2). The borough employed slightly more Inupiat men (64 percent) than Inupiat women (49 percent). However, women, primarily white collar rather than construction workers, tended to receive more total weeks of borough work than did men.

The borough provided more employment to Barrow residents than to those in other North Slope villages.[6] Which villages receive borough jobs, however, depends upon the location and timing of particular borough construction projects, which change in different years. On the basis of our 1977 survey, we cannot adequately examine borough job distribution by village.

[6] *Ibid.* Table 4-28.

Borough Jobs and North Slope Income Levels

During the period of borough activity, the monetary income of North Slope Inupiat rose substantially. Median Inupiat household income increased from about $6,923 in 1970 to about $17,347 in 1977, a gain of roughly 60 percent in real income.[7] The proportional gain in income among North Slope households from 1970-77 (2.5 times) was about the same as made by all Alaska families during this period (2.5 times) and exceeded that made by all U.S. families (1.7 times).[8] These income gains, however, have not brought Inupiat cash income to Alaska or U.S. levels. In 1976, per capita income of North Slope residents was approximately $4,094. For Alaska residents, 1976 per capita income was $10,130, and for all U.S. residents, $6,432.[9] However, levels of income may not accurately reflect levels of economic well-being. Any comparison between Inupiat and other groups must take into account other factors, such as subsistence food and

[7] *Ibid.* Table B-14.

[8] Table 743, "Median Family Money Income of Four-Person Families, by States: 1969 to 1977." U.S. Bureau of the Census, *Statistical Abstract of the United States: 1979*, Washington, D.C., 1970. This comparison is not strictly comparable to the North Slope since it is based on a four-person family standard. Information on family income changes for Alaska alone, however, is not available for this particular time period.

[9] *The Performance Report of the Alaska Economy in 1978*, Alaska Division of Economic Enterprise, Department of Commerce and Economic Development, Vol. 7, 1978, p. 33.

other sources of nonmonetary income, and cost-of-living differences. While such an analysis is beyond the scope of this study, the point is that the availability of jobs indeed had a substantial effect on cash income levels.

While the economic well-being of the general Inupiat population improved considerably with the advent of energy development, income inequity did not increase during this period.[10] Moreover, the distribution of income among the North Slope Inupiat population is virtually the same as in the United States as a whole. This pattern is not typical. In developing countries, economic change often benefits a small proportion of the population.[11]

[10]Kruse, et al., *Energy Development and the North Slope Inupiat . . .*, Table 4-2. Income inequality was assessed through the use of the Gini Coefficient.

[11]Irma Adelman and Cynthia T. Morris, *Economic Growth and Social Equality in Developing Countries* (Stanford, California: Stanford University Press, 1973).

Adelman and Morris demonstrate that economic growth typically increases income inequality and leads to an absolute decline in real income for the largest part of the population.[12] Among Navajo in the Four Corners Area, energy development during the 1970s brought a similar pattern of increased income inequity. The effect of energy employment was to create a small elite of high wage earners.[13]

The wide range of jobs that the borough made available to Inupiat workers may have been an important factor in preventing such increases in income inequity. CIP projects provided high-paying work to unskilled as well as skilled blue-collar workers. Borough government jobs also offered employment to white-collar workers with both clerical and professional skills.

[12]*Ibid.*

[13]Harris Arthur, "Preface," *Native Americans and Energy Development* (Cambridge: Massachusetts, Anthropology Resource Center, 1978).

Table 2. North Slope Inupiat Adult Employment Experience[a] with North Slope Borough, Arctic Slope Regional Corporation, Oil or Pipeline Company, by Sex and Age, 18 and Over

Employer	Sex		
	Men	Women	All Adults
North Slope Borough	64%	49%	57%
Arctic Slope Regional Corporation	24	22	23
Oil companies[b]	25	1	14
(Respondents)	(159)	(131)	(290)

Employer	Age					
	18-24	25-34	35-44	45-54	55+	All Ages
North Slope Borough	75%	68%	53%	57%	16%	57%
Arctic Slope Regional Corporation	29	25	28	21	10	24
Oil companies[b]	8	22	18	21	—	14
(Respondents)	(50)	(88)	(66)	(35)	(49)	(288)

Average Number of Weeks Worked	Age					
	18-24	25-34	35-44	45-54	55+	Total
Male	12.7	19.4	23.4	22.2	5.2	17.1
Female	26.2	31.1	20.5	22.9	5.9	22.6

[a]Includes all Inupiat adults who had worked for these employers at any time before September 1977.

[b]Includes oil companies and Alyeska Pipeline Service Company, the consortium operating the trans-Alaska Pipeline.

Source: ISER North Slope Survey, 1977, Questions 37, 38, 40.

Table 3

Labor Force Participation of North Slope Inupiat Males, 18-54, by Residence and Month, 1977
(Percentage Distribution)

Participation	Month												
	Oct 76	Nov 76	Dec 76	Jan 77	Feb 77	Mar 77	Apr 77	May 77	Jun 77	Jul 77	Aug 77	Sep 77	Annual Average
ALL MALES													
in Labor Force													
Employed	34	34	34	36	38	40	44	48	54	61	65	68	46
Unemployed, wanted work	14	13	14	19	13	12	11	10	11	7	6	6	12
Total	48	47	48	55	51	52	55	58	65	68	71	74	58
Not in Labor Force													
Intermittent workers	42	43	42	35	39	38	35	32	25	22	19	16	32
Non-wage earners	10	10	10	10	10	10	10	10	10	10	10	10	10
Total	52	53	52	45	49	48	45	42	35	32	29	26	42
Total Respondents (129)													
BARROW MALES													
in Labor Force													
Employed	34	34	37	42	44	46	49	51	59	68	71	68	50
Unemployed, wanted work	17	15	15	17	10	13	12	15	12	5	5	5	12
Total	51	49	52	59	54	59	61	66	71	73	76	73	62
Not in Labor Force													
Intermittent workers	37	39	36	29	34	29	27	22	17	15	12	15	26
Non-wage earners	12	12	12	12	12	12	12	12	12	12	12	12	12
Total	49	51	48	41	46	41	39	34	29	27	24	27	38
Total Respondents (41)													
VILLAGE MALES													
in Labor Force													
Employed	33	33	31	30	31	31	39	44	50	59	59	68	42
Unemployed, wanted work	10	11	13	20	16	11	9	7	9	9	6	6	11
Total	43	44	44	50	47	42	48	51	59	68	65	74	53
Not in Labor Force													
Intermittent workers	49	48	48	42	45	50	44	41	33	24	27	18	39
Non-wage earners	8	8	8	8	8	8	8	8	8	8	8	8	8
Total	57	56	56	50	53	58	52	49	41	32	35	26	47
Total Respondents (88)													

Source: ISER North Slope Survey, 1977.

Table 4

Labor Force Participation of North Slope Inupiat Females, 18-54, by Residence and Month, 1977
(Percentage Distribution)

Participation	Month												
	Oct 76	Nov 76	Dec 76	Jan 77	Feb 77	Mar 77	Apr 77	May 77	Jun 77	Jul 77	Aug 77	Sep 77	Annual Average
ALL FEMALES													
in Labor Force													
Employed	39	39	40	45	45	44	45	45	45	45	47	52	44
Unemployed, wanted work	8	8	8	8	8	7	6	10	10	10	8	7	8
Total	47	47	48	53	53	51	51	55	55	55	55	59	52
Not in Labor Force													
Intermittent workers	27	27	26	21	21	23	23	19	19	19	19	15	22
Non-wage earners	26	26	26	26	26	26	26	26	26	26	26	26	26
Total	53	53	52	47	47	49	49	45	45	45	45	41	48
Total Respondents (109)													
BARROW FEMALES													
in Labor Force													
Employed	47	47	49	55	55	52	55	55	56	57	57	57	53
Unemployed, wanted work	6	6	7	4	4	7	7	11	13	11	11	9	9
Total	53	53	56	59	59	59	62	66	69	68	68	66	62
Not in Labor Force													
Intermittent workers	29	29	26	23	23	23	20	16	13	14	14	16	20
Non-wage earners	18	18	18	18	18	18	18	18	18	18	18	18	18
Total	47	47	44	41	41	41	38	34	31	32	32	34	38
Total Respondents (45)													
VILLAGE FEMALES													
in Labor Force													
Employed	27	27	27	28	30	30	30	30	26	27	31	44	30
Unemployed, wanted work	9	10	9	14	12	8	5	8	5	3	3	5	8
Total	36	37	36	42	42	38	35	38	31	30	34	49	38
Not in Labor Force													
Intermittent workers	25	24	25	19	19	23	26	23	30	31	27	12	23
Non-wage earners	39	39	39	39	39	39	39	39	39	39	39	39	39
Total	64	63	64	58	58	62	65	62	69	70	66	51	62
Total Respondents (64)													

Source: ISER North Slope Survey, 1977.

Absorbing Inupiat Youth into the Labor Force

A common problem of developing areas is how to absorb into the labor force a growing population of young adults. The North Slope Borough's ability to create employment averted a potential crisis when the large population of babies born on the North Slope during the 1950s and 1960s came of working age in the 1970s.

The success of public health programs in reducing infant mortality, combined with the high cultural value placed on children, resulted in a large dependent population. In 1960, over 40 percent of the North Slope Inupiat population was 10 years of age or under.[14] By 1970, the age-specific birth rate for women 15-44 had declined by over 50 percent,[15] and the pressures of generating future jobs lessened. Children growing up in the 1960s entered the labor force in the 1970s and 1980s when the borough could provide them with jobs. Through its employment program, the borough has made a social investment which may have substantial benefits in the economic well-being of young adults and their ability to raise the next generation.

Community Evaluation of the Borough's Local-Hire Program

The North Slope Borough's local-hire program provided some employment for over half the Inupiat population, helped to raise income levels without increasing income inequity, and helped absorb the large population of young adults into the work force. Inupiat residents viewed the increase in good jobs as the single most positive change in community conditions that had occurred on the North Slope since 1970.[16] In 1977, almost 68 percent of Inupiat residents rated "number of good jobs you can get" favorably, while only 33 percent considered that the job situation had been favorable in 1970. Those residents who did not see the employment situation as improving primarily lived in villages without borough CIP projects.

Inupiat Work Patterns in a Job Situation Adapted to Contemporary Inupiat Life Styles

The North Slope Borough's local hire program eliminated or at least reduced many of the common barriers to rural Native employment. To minimize conflicts between wage work and subsistence, the borough (and the Arctic Slope Regional Corporation) had a policy of granting leaves of absence for subsistence activities. During the 1977 spring whaling season, for example, borough operations virtually came to a halt. In addition, there was high tolerance for absenteeism in both office and construction jobs. Children visited parents at the office, and working conditions were generally social and flexible.

In contrast to typical public employment programs, the borough paid high wages and offered useful jobs, not make-work positions. Borough construction pay matched the wage scales established during the building of the trans-Alaska pipeline. Indeed, during the pipeline construction period, 1974-1977, the borough essentially competed with the oil companies for Native workers. The average weekly wage of North Slope Inupiat adults in 1977 was almost $500 per week and about 25 percent had weekly paychecks of $800 or more.[17] Yet, unlike high-paying pipeline work, borough construction jobs did not require workers to leave home and cope with prejudice or an unfamiliar social environment. Over 90 percent of all the jobs held by North Slope Inupiat during 1977 were in their home villages.[18] The borough also attempted to help the Inupiat advance occupationally by establishing on-the-job training programs as well as a local Inupiat University. Thus, in terms of pay levels, local availability, opportunities for advancement, comfortable social surroundings, and adaptation to subsistence pursuits, the jobs on the North Slope tended to be "good" jobs. The majority of Inupiat residents indeed perceived large numbers of "good jobs" to be available to them.

How did North Slope Inupiat men and women respond to these job opportunities? Under the relatively favorable labor market conditions found on the North Slope, did the labor force participation rates of Inupiat men and women approach national norms? Or did special cultural factors result in lower labor force participation despite the availability of good jobs? With the emphasis on local hire and advancement, did the proportion of Inupiat in skilled occupations increase? Or did the largest proportion remain concentrated in unskilled jobs?

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[14] Kruse, et al., *Energy Development and the North Slope Inupiat . . .*, Figure 3-1.

[15] *Ibid.* Table 3-2.

[16] *Ibid.* Figure 6-1. Respondents were asked to rate fifteen conditions in 1970 and 1977. These included such areas as hunting and fishing, prices of food and clothing, schools, home living space, etc. The largest positive change occurred in the area, "the number of good jobs you can get."

[17] *Ibid.* Table 4-16.

[18] This statistic refers to North Slope Inupiat adults interviewed. North Slope households also reported that about 29 percent of members were temporarily away from home. Of these, about 37 percent were away because of employment. However, many of these moves were to Barrow, Nuiqsut, and other nearby North Slope villages.

Table 5

Annual Average Labor Force Participation of North Slope Inupiat, 18-54, by Sex and Residence, Compared to National Norms: 1977

	Labor Force Participation (Percentage Distribution)					
	North Slope Inupiat			All U.S. Workers		
Sex	Barrow	Villages	Total*	White	Black	Total
Males	62%	53%	58%	92%	84%	91%
Females	62	38	52	60	61	61

*Percentages for North Slope males are based on 129 respondents, 41 in Barrow and 88 in the villages. Percentages for North Slope females are based on 109 respondents, 45 in Barrow and 64 in the villages.

Source: U.S. Department of Labor, *Employment and Training Report of the President*, 1978; ISER North Slope Survey, 1977.

Inupiat Labor Force Participation Compared to National Norms

Despite cultural differences and geographical isolation, Inupiat women participated in the labor force almost as much as did women nationally (Table 5).[19] They held secretarial and bookkeeping positions, for example, and worked as teachers' aides and health aides. Inupiat women had an annual labor force participation rate of 52 percent compared to a national female labor force participation rate of 61 percent. Among Barrow residents, the female labor force participation rate reached 62 percent. As we will later discuss, those Inupiat women with low labor force participation rates tended to be a small group of older village women who preferred not to speak English in the survey interview. Village women who preferred to speak English participated in the labor force about as much as Barrow women.

About 26 percent of Inupiat women did not work for wages in 1977 (Table 4). Like women nationally, the major reason (84 percent) that these women gave for not working outside the home was family pressures and responsibilities (Table 6). As one explained, "My husband doesn't want me to work—just take care of the kids. I've been wanting to go to work but he won't let me." These family restraints may well diminish. A day-care facility, for example, has become first priority for the 1979

[19]The response of North Slope Inupiat women to the job opportunities created through the North Slope Borough construction boom also differed little from the response of Fairbanks and Anchorage women to the job opportunities created during the trans-Alaska pipeline construction boom. In 1976, the height of the construction boom, 59 percent of Fairbanks women and 54 percent of Anchorage women were in the labor force (*The Status of Women in Alaska*, compiled by the University of Alaska's Institute of Social and Economic Research and Joan Katz, for the Alaska State Commission for Human Rights, January, 1977, p. 53). These statistics are based on a survey of the Anchorage population conducted by Diddy Hitchins, Richard Ender, and Hayden Green, *Anchorage Housing Study*, 1975, and a survey of the Fairbanks population conducted by John Kruse, Institute of Social and Economic Research, in 1975. These statistics are not strictly comparable to the North Slope labor force participation rates since they refer to labor force participation during one point in time, the survey month (not annual averages), and they include adults in general, whereas the North Slope data concerns adults from 18-54.

Table 6

Reasons Why North Slope Inupiat, Ages 18-54, Were not Employed, by Sex: 1977
(Percent Distribution)

	Sex		
Reasons	Males	Females	Total
Family responsibilities	8%	84%	64%
Poor health	41	10	18
Could not find work	17	–	5
Laid off	17	–	4
Other	17	6	9
Total	100%	100%	100%
(Respondents)	(9)	(20)	(35)

Significance and Association

$\chi^2_4 = 19.52, p < .001; \phi_b = .56$

Source: ISER North Slope Survey, 1977.

Capital Improvements Projects in Barrow, due to strong community pressure to provide a place for young children so that parents can get and keep jobs. As one mother said at a special community meeting to discuss the need for the center:

> As a working mother, I find that even a reliable babysitter is in great demand. There are so many jobs available to anyone that when a working mother or father wants to work, we have problems trying to find a babysitter.[20]

In contrast to Inupiat women, the labor force participation of Inupiat men in the prime working ages differs substantially from national patterns. While an annual average of 91 percent of U.S. men from 18 to 54 are in the labor force, the annual average labor force participation of North Slope Inupiat men in this age group is 58 percent, less than two-thirds the national average.[21] Inupiat men in Barrow, the center of job opportunities, participate in the labor force only somewhat more (62 percent) than men living in the villages (53 percent).

This pattern of male labor force participation does not occur because a large number of Inupiat men choose not to work in the wage economy. Very few Inupiat men (10 percent) are non-wage earners, and most of these are out of the labor force due to poor health.[22] The major reason for the low rate of labor force participation by Inupiat males compared to national patterns is that about half of these men participate in the cash economy intermittently. During 1977, on the average, about a third of the Inupiat male workers were temporarily out of the labor force (Table 3).[23]

[20]North Slope Borough, *Annual Overall Economic Development Program Report and Program Projection*, July 1979, p. 25.

[21]These male labor force participation rates are not due to the possibility that a large number of Inupiat men were away from home working and were therefore missed in the survey. The interview asked if any member of the household was temporarily away from home and, if so, why they were away. Of the Inupiat men temporarily away from home, only 13 percent were gone because of employment. The labor force participation rate of Inupiat men away from home was thus lower than that of Inupiat men generally on the North Slope.

[22]Nationally, the major reason that prime working-age men do not work is that they are in school (46 percent), although health problems are second in importance (25 percent). (U.S. Department of Labor, *Handbook of Labor Statistics, 1977*, Bulletin 166, Washington: U.S. Government Printing Office, 1977.) Our survey did not include Inupiat men away at school, who would have been enrolled outside the North Slope. However, since only 10 percent of males temporarily away (6 individuals) were reported by their families to be at school, this is unlikely to be an important explanation for not working in the cash economy.

[23]Our estimate of the proportion of North Slope Inupiat who are intermittent workers is probably too high due to limitations of our survey measure. The survey was conducted in the fall of 1977 and people may have forgotten to mention some months during the previous year when they wanted work. Such forgetting may account for some of the people classified as temporarily withdrawn. However, measurement error is not the entire explanation. In September 1977, the month just prior (or very close) to the survey interview, 16 percent of North Slope Inupiat men were not working and did not say they wanted work.

Basis of Inupiat Male Pattern of Labor Force Participation in the Wage Economy

There are two reasons for the comparatively low rate of Inupiat male labor force participation in the wage economy. The most important of these is economic, resulting from lack of job opportunities during certain seasons and in certain villages. The second reason for low participation is personal choice, since many Inupiat men prefer an intermittent work style. The effects of both these factors were evident in 1977, when a summer job boom followed a winter of poor job opportunities.

Due to temporary financing difficulties in the winter of 1976-77, the borough cut back its construction program. Work continued primarily on projects close to completion. Intensive construction work resumed in the summer of 1977. This increase in job opportunities dramatically affected Inupiat male employment. Labor force participation almost doubled, climbing from a low of 47 percent in November 1976 to a high of 74 percent in September 1977 (Table 3).

However, even during months when good job opportunities were abundant, Inupiat male labor force participation still remained below national norms. In Barrow during the intense 1977 summer construction season, for example, labor force participation peaked at 76 percent of Inupiat men in the primary working ages (Table 3). One explanation for this pattern may be voluntary withdrawal from the labor force during certain months of the year. When asked about their work schedule preferences, slightly over half of Inupiat men said that they preferred to work in the wage economy only part of the year (Table 7). Blue-collar construction work provides men with this job flexibility. About the same proportion of Inupiat women also prefer part-year work. However, Inupiat women are primarily white-collar workers in year-round positions. Inupiat men, except in the oldest age group, tended to be somewhat less likely than women to work year-round (Table 8).

The preference of many Inupiat men for part-year work does not appear to be changing in the younger generation. Among North Slope male high school students, especially those in the villages, more

than half also prefer part-year work schedules (Table 7). In contrast, Inupiat women may be shifting slightly more toward year-round work. Inupiat female high school students, for example, are significantly more likely than male students to desire year-round work.[21]

What is the basis for part-year wage work preferences among many Inupiat men? According to the conventional wisdom, the time required for hunting conflicts with the time requirements of wage work. Our analyses of the way Inupiat men allocate their time in the subsistence and wage economy suggest that this explanation is not adequate. Time

[21] Judith Kleinfeld and Jack Kruse, *High School Views of North Slope Borough Students*. (Fairbanks: University of Alaska, Institute of Social and Economic Research, 1977). The question asked in the high school student survey was: "After you have finished your schooling, do you want a year-round job or to work only part of the year so you can hunt and fish a lot, or don't you want a job?" Although women also hunt and fish, this phrasing may have biased the part-time job alternative for female students.

Table 7

Work Schedule Preferences of North Slope Inupiat Adults (18-54) and Inupiat High School Students, by Residence and Sex: 1977
(Percentage Distribution)

	Residence					
	Barrow		Villages		Total	
Preferences	Males	Females	Males	Females	Males	Females
North Slope Adults						
Year-round job	28%	44%	48%	45%	42%	45%
Part-year job	72	56	48	49	56	52
No job	–	–	4	6	2	3
Total	100%	100%	100%	100%	100%	100%
(Respondents)	(36)	(34)	(77)	(49)	(113)	(83)
North Slope High School Students						
Year-round job	46%	67%	18%	50%	31%	59%
Part-year job	54	33	82	50	69	41
No job	–	–	–	–	–	–
Total	100%	100%	100%	100%	100%	100%
(Respondents)	(35)	(51)	(40)	(48)	(75)	(99)

Significance and Association
High School Students

Barrow: $\chi^2_1 = 3.74$, n.s.

Villages: $\chi^2_1 = 10.10$, $p < .01$; $\phi = .10$

Total: $\chi^2_1 = 13.37$, $p < .01$; $\phi = .08$

North Slope Adults

Barrow: $\chi^2_1 = 0.86$, n.s.

Villages: $\chi^2_2 = 0.45$, n.s.

Total: $\chi^2_2 = 0.56$, n.s.

Source: ISER North Slope High School Survey, 1977; ISER North Slope Survey, 1977.

conflicts between hunting and wage work may indeed explain withdrawing from the labor force in some situations, for example, when the work is located outside the region or when employers do not give subsistence leave. As one young man described why he had quit his pipeline job, "I worked until April '76. It was whaling time and I came home. I told them they didn't have enough dollars to keep me working." The North Slope Borough economy, however, provided local jobs and major employers granted subsistence leave. Only 4 percent of Inupiat men said they quit work to hunt, and these were all 18-24 year olds

North Slope Inupiat men have been highly successful in integrating subsistence pursuits with wage employment. Carrying out a high level of subsistence activities does not necessarily require long periods away from wage work. Modern hunting technology—snow machines, rifles, outboard motors, and airplanes—has greatly reduced the time requirements. No longer must large amounts of time be spent traveling to good hunting areas or in the painstaking construction and repair of equipment. Subsistence activities can be actively pursued on weekends, after work, and on vacation and leave time. Indeed, half or more of the North Slope Inupiat adults surveyed participated in central subsistence activities on such a part-time basis. The only exception was spring whaling, which 54 percent of adults carried out full-time.[25]

Inupiat men who worked in the wage economy most of the year and those who worked shorter periods differed little in their levels of subsistence activities (Table 9). Among Inupiat men who worked 9—12 months per year in the wage economy, 52 percent maintained medium to high levels of subsistence effort. Among men who worked only 1—4 months, 45 percent maintained similarly high levels of subsistence activities. Moreover, Inupiat men who

[25]Kruse, et al., *Energy Development and the North Slope Inupiat . . .*, Table 5-10.

Table 8

Year-Round and Part-Year Work Patterns of North Slope Inupiat Wage-Earners, by Age and Sex: 1977

Employment Pattern	Age 18-24	25-34	35-44	45-54	Total
Males					
Year-round*	29%	41%	33%	64%	39%
Five-to-eight months	15	30	20	6	22
Four months or less	56	29	47	30	39
Total	100%	100%	100%	100%	100%
(Respondents)	(16)	(47)	(29)	(14)	(106)
Females					
Year-round*	55%	64%	59%	58%	60%
Five-to-eight months	14	8	34	30	16
Four months or less	31	28	7	12	24
Total	100%	100%	100%	100%	100%
(Respondents)	(19)	(24)	(10)	(9)	(62)

*Year-round employment was defined as 9-12 months, in order to be consistent with the full-time work schedule of the school district.

Significance and Association

Males: $\chi^2_6 = 10.89$, $p = .09$; $\tau_c = .09$

Females: $\chi^2_6 = 3.31$, n.s.; $\tau_c = .07$

Source: ISER North Slope Survey, 1977.

Table 9

Annual Effort North Slope Inupiat, 18-54, Spent on Subsistence by Months Worked for Wages and by Sex: 1977*
(Percentage Distribution)

Annual Effort on Subsistence	Months Worked for Wages				
	0	1-4	5-8	9-12	Total
Males					
None	29%	25%	17%	20%	23%
Low	13	30	38	28	28
Medium	36	20	16	32	26
High	22	25	29	20	23
Total	100%	100%	100%	100%	100%
Average Annual Effort	5.3	4.9	5.5	4.9	5.2
(Respondents)	(24)	(41)	(26)	(39)	(130)
Females					
None	39%	46%	41%	34%	39%
Low	28	50	40	38	36
Medium	22	4	19	10	14
High	11	–	–	18	11
Total	100%	100%	100%	100%	100%
Average Annual Effort	3.5	1.0	2.4	3.6	3.1
(Respondents)	(47)	(17)	(8)	(37)	(109)

*See Appendix for a detailed explanation of the subsistence index of effort.

Significance and Association

Males: $\chi^2_9 = 6.98$, n.s.

Females: $\chi^2_9 = 7.93$, n.s.

Source: ISER North Slope Survey, 1977.

were temporarily out of the labor force during a particular month generally had no higher levels of subsistence activity that month than men who were employed. In interpreting these patterns, it is important to keep in mind that the measure of subsistence activity used in the survey was not precise. The interview asked if the person participated in each subsistence activity and if it took "most of your time, was it something you did sometimes or on weekends or after work, or was it something you went on vacation or leave to do?" The interview did not ask, for example, exactly how many days or hours the person spent in the activity. Nonetheless, these results raise questions about the common assumption that desire to pursue subsistence activities is the central explanation for part-year work patterns.

If time conflicts between wage work and subsistence are not the entire explanation for preferences for part-year work, what else might be important? One possibility is the increased value of leisure time, given the high wage rates on the North Slope (the backward bending supply curve). Another explanation is the historical experience of Inupiat men in the wage economy, the process of socialization into wage work.[26] Wage work patterns of men from the turn of the century onward reinforced the intermittent work rhythms of the traditional hunting econ-

[26]For a careful analysis of Inupiat subsistence and wage work patterns from the turn of the century to the early 1950s, see Joseph Sonnenfeld, *Changes in Subsistence Among the Barrow Eskimo*, Ph.D. dissertation, Johns Hopkins University, 1957.

omy. During the commercial whaling economy (circa 1854-1906), whalers competed strenuously for the labor of Inupiat crew members, particularly skilled harpooners.[27] For a six-week work season, the Inupiat crew and their families were supported through the remainder of the year by provisions of food, clothing, and housing. Inupiat men's first widespread experience with wage work unrelated to hunting and trapping occurred through the Department of the Navy's oil exploration program in Naval (National) Petroleum Reserve No. 4 (1946-1953).[28] Barrow Inupiat petitioned for construction employment, and the Navy agreed that its civilian contractor, Arctic Construction (ARCON), would employ local labor. The Inupiat employees received high union wages with time and a half for overtime. The work required a taxing 9-hour, 7-day schedule, and employees were also frequently laid off. Thus, the majority of Inupiat men did not work for long or consecutive periods. On the average, Inupiat men worked 25 months out of the possible 87-month work period.[29] The end of the ARCON program brought a period of severe unemployment, but Defense and Early Warning (DEW) Line construction began within a year. In his study of DEW-Line employment at Kaktovik, Chance found the pattern similar to ARCON employment—high demand for Inupiat labor, high wages, great desire on the part of the Inupiat to participate in wage work, and a successful job adaptation combined with some intermittent work patterns.[30] In the 1960s, a series of uncoordinated government construction projects (schools, water supply improvements, electrical power, airport improvements, a gas distribution system, etc.) continued the historical cycle of boom and bust.[31] Given these historical conditions, intermittent labor at high-paying jobs may well have become a central cultural adaptation of many Inupiat men to the wage economy. The current North Slope economy is continuing this socialization experience.

Perhaps the better question is *not* "why do many Inupiat men prefer part-year work?" but "why should many Inupiat men want to work year-round?" Unless men are married and supporting a family (an important factor discussed later), economic pressures to work year-round are not necessarily strong. A teacher described the situation in one large North Slope village:

> I've had twenty-three students graduate over the last 3 years. Except for two working temporary construction, the others are hanging out. Last year I placed five graduates in good jobs. They drifted out over the summer. What's the incentive to work? The kids live with their parents. They get food, clothes, some spending money.

In contrast to middle-class whites, social prestige or sense of identity among North Slope Inupiat may have little to do with occupational achievement. The ethnographic interviews suggest that hunting remains far more important. Young men who chose intermittent work patterns, for instance, discussed their wage jobs in superficial generalities but described their hunting activities with involvement and intensity. Despite the shift from subsistence to cash as the economic foundation of contemporary life on the North Slope, the "professional" hunter, competent to survive in the arctic, remained a central male character ideal. As one young man said of his brother:

> He's a hunter. He's always hunting. He'd be there surviving. That guy can live on anything. He's all right. He got a fox by running after it. He only works part time when he wants to make money. He's a wise man, smart.

In sum, personal preference as well as the economic situation may be important in explaining male Inupiat patterns of labor force participation. *The primary factor, however, is job availability.* The single most important reason (39 percent) for job termination among Inupiat men in 1977 was being laid off. Lay-offs seriously affected men throughout the 18-44-year age range, while they seriously affected women only in the youngest age group.

Changes in Inupiat Labor Force Participation Rates Over Time

The job opportunities created by the North Slope Borough have enabled increasing numbers of Inupiat women to enter the labor force. These opportunities, however, did not suddenly increase Inupiat female labor force participation but rather reinforced a long-term historical trend. In 1960, according to census information,[32] only 12 percent of Inupiat women were in the labor force (Table 10). In 1970, women's labor force participation jumped to

[27] *Ibid.*

[28] *Ibid.*

[29] *Ibid.*

[30] Norman Chance, *The Eskimo of North Alaska* (New York: Holt, Rinehart, and Winston, 1966).

[31] E.R. Rice and J. Ronald Saroff, *The Barrow Community Development Study* (Fairbanks: University of Alaska, March 1964).

[32] Census information needs to be used with caution due to its unreliability in rural areas (see Appendix A). The census remains, however, the best source of quantitative historical information.

Table 10

Changes in Labor Force Patterns and Marital Status of North Slope Inupiat Adults, by Sex and Year: 1960, 1970, 1977*

	Social and Economic Change					
	Males			Females		
March Labor Force Participation	March 1960	March 1970	March 1977	March 1960	March 1970	March 1977
In the Labor Force						
Employed	42%	51%	44%	4%	21%	45%
Unemployed, wanted work	26	10	13	8	2	8
Total	68%	61%	57%	12%	23%	53%
Not in the Labor Force	32%	39%	43%	88%	77%	47%
Total Persons	(340)	(674)	(102)	(287)	(570)	(87)
Annual Median Weeks Worked						
Employed population only	–	34	26	–	25	47
Total Persons	–	(469)	(85)	–	(172)	(53)
Marital Status						
Percent Not Married	40%	43%	50%	20%	27%	33%
Total Persons	(400)	(601)	(115)	(299)	(524)	(96)

*Labor force participation and median weeks worked reflect changes for adults 18-64, while marital status reflects changes for Inupiats 18 and over. Point Hope and Kaktovik were excluded to maintain comparability with census data.

Source: U.S. Census, 1960, 1970; ISER North Slope Survey, 1977.

23 percent. By 1977, the proportion of Inupiat women in the wage economy more than doubled again. In addition, those women who were employed tended to stay in the wage economy longer. Median weeks worked of employed Inupiat women climbed from 25 weeks in 1970 to 47 weeks in 1977.

The entrance of Inupiat women into the labor force parallels the national increase in female labor force participation, but it is much more extreme. Between 1960 and 1977, Inupiat female labor force participation increased more than four times. During this period, the labor force participation of rural black women (the female population group with the greatest growth) increased by 50 percent, and the labor force participation rates of urban white women increased by 33 percent.

It is not clear that Inupiat male labor force participation rates have similarly increased over time. According to the census, in March 1960 about 68 percent of Inupiat men between 18 and 64 were in the labor force. In March 1977, the North Slope survey indicated that 57 percent of Inupiat men were in the labor force. In addition, the median weeks worked of employed Inupiat men appears to have dropped from 34 weeks in 1970 to 26 weeks in 1977. Differences in the questions used to determine labor force status in various years do not easily explain why male labor force participation would be lower in 1977.[33] An-

[33]The 1960 census question used to measure unemployment asked whether the person was "looking for work." This general question, requiring no *specific* job-seeking activity, was similar to the ISER 1977 survey question which asked whether a person merely *wanted work* during months when not working. The 1970 census question implied actual job-seeking activity during the month: "Has this person been looking for work during the past four weeks?" Thus, the drop in male labor force participation between 1960 and 1970 could be a measurement artifact. However, the survey question during 1977 was very liberal in the definition of unemployment and should have resulted in high labor force participation

(Footnote 33 continued on next page)

other possible explanation is that male employment on the North Slope was atypically low in March 1977, since work on Borough construction projects was beginning to resume after delays caused by financing problems. Yet, even in September 1977, the peak employment month on the North Slope, Inupiat male labor force participation was only 72 percent of the male work force in the 18-64 year age group, a rate not substantially higher than reported during non-peak months in the 1960 census (68 percent) or 1970 census (61 percent).

It is also of interest that the proportion of Inupiat men employed on the North Slope during the peak work season in 1977 differed very little from the peak employment level reported in the 1940s. During the height of the ARCON boom, Sonnenfeld estimated Inupiat male employment in Barrow at about 75 percent of the population.[34] Thus, the peak employment level for Inupiat men may be remaining somewhat stable. There is, however, some evidence supporting the more expected pattern, that male labor force participation has increased over time. In the North Slope survey, slightly over half of the Inupiat men said that they had worked more in 1977, primarily because more jobs were available (Table 11). This belief reflects a realistic assessment; more jobs did exist on the North Slope in 1977 than in 1970. However, while 54 percent of Inupiat men said they had worked more in 1977, 45 percent said they had worked about the same amount or even less. Thus, the apparent contradiction between census trends and personal estimation may actually not be substantial. In addition, it would be quite difficult for men, particularly those who had worked intermittently, to remember exactly how long they had been employed 7 years ago. It would be natural to assume that, since more jobs were available, one had experienced more employment.[35] The conservative conclusion is that Inupiat male labor force participation has probably remained about the same between 1960 and 1977.

Table 11

Perceived Changes in the Time that North Slope Inupiat Wage Earners, 25-54, Spent Working in 1977 Compared to 1970, by Sex and Age*

(Percentage Distribution)

	Sex		
Working in 1977	Males	Females	Total
More	54%	58%	55%
About the same	26	23	25
Less	20	19	20
Total	100%	100%	100%
(Respondents)	(105)	(66)	(171)

	Working in 1977			
	Men		Women	
Reasons	More	Less	More	Less
More jobs now	58%	–	42%	–
Less jobs now	–	48	–	31
Chose not to work for wages	–	–	3	8
Have better job	12	–	13	–
Need more money	23	–	5	–
Personal reasons	7	52	37	61
Total	100%	100%	100%	100%
(Respondents)	(48)	(25)	(24)	(9)

	Age			
Working in 1977	25-34	35-44	45-54	Total
More	52%	44%	83%	55%
About the same	20	28	7	20
Less	28	28	10	25
Total	100%	100%	100%	100%
(Respondents)	(71)	(39)	(23)	(133)

*The question read, "Did you spend more, less, or about the same amount of time working for pay this year compared to the time you spent in 1970?" And, if more or less, "Why is that?"

Source: ISER North Slope Survey, 1977.

Why Inupiat Women Have Surged into the Work Force

Economic development does not necessarily increase the labor force participation of women. Quite the contrary, in many countries the transition from a traditional to a modern economy has reduced the economic activity of women.[36] In developing African nations, for example, men typically seek

(Footnote 33, continued)
rates. Still, differences in specific questions used in 1960, 1970, and 1977 and other problems, such as census inaccuracies or forgetting employment desires in a past month, necessitate cautious interpretation.

[34] Sonnenfeld, *Changes in Subsistence . . . .*, 1957, pp. 544-545.

[35] In addition, Inupiat men from 25-54 years may have seen themselves as working more in 1977 because this group includes some men who were 18-24 years old seven years ago, a life-cycle period of lower labor force participation.

[36] John D. Durand, *The Labor Force in Economic Development* (Princeton: Princeton University Press, 1965).

wage employment in mines and factories, leaving women in rural areas to tend children and work on small subsistence farms. In addition, growth of a modern commercial sector tends to hurt informal trade, a traditional sphere of female economic activity. Colonial education systems also shut women out of the modern economic sector by neglecting their education in favor of preparing a small group of men for government jobs.[37] A central theme in the research literature is the deterioration that economic development frequently brings to the economic position, status, and prestige of women.[38]

The effects of economic development on female labor force participation depend on a number of factors—the particular type of labor that is in demand, the educational levels of women, and cultural norms defining women's roles. Examining changes in female labor force participation over time in more than 100 countries, Durand concludes:

> As economic development progresses, the overall level of participation by females in the labor force rises in some countries, falls in others, and oscillates in still others. . . . Whether economic development brings an increase or a decrease of opportunities for women to be employed depends to a great extent on the relative proportions of female workers employed in the fields that expand and those that contract in the process of development.[39]

The high participation rate of Inupiat women in the wage economy results from a number of favorable conditions. On the labor demand side, the specific type of development that has occurred on the North Slope has brought large numbers of jobs which the majority culture has conventionally defined as women's work. Since the 1960s, government has been a steadily expanding industry, and government employs large numbers of clerical, education, health, and social service workers.

On the supply side, Inupiat women have received both the general education and specific vocational training that qualifies them for wage work. In the younger generation, Inupiat women's level of educational attainment parallels that of men.[40] About a third of Inupiat women have received vocational training in paraprofessional programs and another 20 percent in clerical fields. Nor do Inupiat cultural attitudes toward women's roles seriously restrain female labor force participation as they do, for example, in Moslem countries with a tradition of female seclusion.

The difficulties of the woman's role in the former subsistence economy may also have intensified Inupiat women's desires to move into the modern sector. As Brower describes the allocation of work at the turn of the century:

> The old man hung all his whalebone on his wife's back, first lashing the butts so that the tips of the bone stuck out six feet on either side. Although the woman took it as a matter of course, it made me groan just to see her straining under the load. Not so their two full-grown sons. Hardly had they started when the boys hung their bone on her back as well. This left them with only their rifles to carry. Soon even these were a burden, so they piled them on their mother, too.
>
> It was a sight to remember—that loaded-down woman followed by three husky men sauntering along with their hands behind them, at peace with the universe.[41]

The movement of Inupiat women into the wage economy is one aspect of long-term processes of cultural change through which women are seeking wider alternatives. One Eskimo woman in southwestern Alaska offered an interpretation that may have more general applicability:

> Native men lost more in the cultural changes that have taken place. It's hard for men to identify with the jobs they can get in the villages. Women didn't lose so much. Now they can get a job, move about, use their intelligence.

Differences in Participation in the Wage Economy Between Young People and the Older Generation

A commonly held view is that young people, better educated and less traditional, will participate in the wage economy more than the older generation. This pattern appears to be occurring only for Inupiat women (Figure 2). For women, a small but statistically significant relationship occurs between age and labor force participation ($r = -.20$, $p < .05$). Among men, however, such a pattern is not clear. No statistically significant relationship occurs between age and labor force participation. The numbers of individuals sampled in each age group, however, are small.[42] Nonetheless, it is of interest that the expected pattern, at least for men, is not evident.

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[37]Guy Standing, "Education and female participation in the labor force," *International Labor Review*, 114(3), 1976, pp. 281-297.

[38]The classic study in this field is Ester Boserup, *Women's Role in Economic Development* (London: Allen and Unwin, 1970). An excellent research synthesis, together with an annotated bibliography, may be found in Irene Tinker, Michele Bo Bramser, and Mayra Buvinic, *Women and World Development* (New York: Praeger Publishers, 1976).

[39]Durand, p. 120, 150.

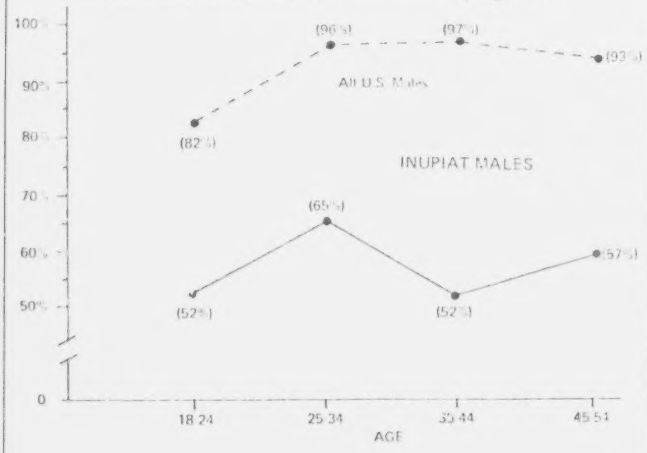
[40]Kruse, et al., *Energy Development and the North Slope Inupiat . . .*, Table 3-6.

[41]Charles Brower, *Fifty Years Below Zero* (New York: Dodd, Mead and Co., 1942), p. 106.

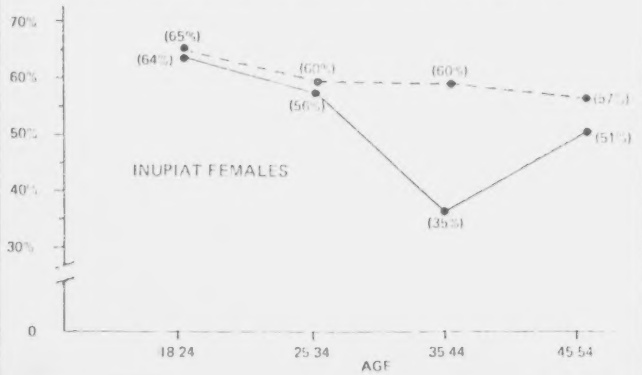
[42]Inupiat males: 18-24 (n=24); 25-34 (n=40); 35-44 (n=36); 45-54 (n=19). Inupiat females: 18-24 (n=26); 25-34 (n=38); 35-44 (n=29); 45-54 (n=16).

Figure 2

A. Annual Average Labor Force Participation Rates of North Slope Inupiat Males Compared to National Norms by Age: 1977



B. Annual Average Labor Force Participation Rates of North Slope Inupiat Females Compared to National Norms by Age: 1977



Source: U.S. Department of Labor, *Employment and Training Report of the President*, 1978; ISER North Slope Survey, 1977.

Inupiat Male and Female Participation in the Wage and Subsistence Economies

The similarity of Inupiat male and female participation in the wage economy is unusual. In most societies, men outnumber women in the labor force. In over 80 percent of all nations, about twice as many men as women are economically active outside of the subsistence sector. Those countries with about equal male and female labor force participation rates tend to be (1) agricultural societies at the lowest stage of economic development, such as Burundi and the Ivory Coast; (2) highly developed socialist societies, such as Denmark and Sweden; and (3) Caribbean countries where unstable marriage relationships make it necessary for women to achieve economic independence, such as Haiti and Jamaica.[43]

Inupiat men participate considerably more than Inupiat women, however, in the subsistence economy, at least in those major productive activities which occur outside of the household.[44] In every age group, men exceed women in subsistence effort (Table 12). This difference is most marked in the youngest age groups. Among 18-24 year olds, 55 percent of the men have medium or high levels of subsistence effort compared to 13 percent of the women.

In sum, Inupiat men maintain moderate levels of activity in both the subsistence and wage economies. The pattern is typical of young men as well as the older generation. In contrast, Inupiat women maintain levels of activity comparable to men in the wage economy but are less active in the subsistence economy. Young Inupiat women especially appear to be more attached to the wage economy and less active in the subsistence sector.

Individual Characteristics Related to Higher Labor Force Participation

If age is not important in explaining differences in labor force participation, what other factors might be important? Analyses of the relationship of personal characteristics to number of months in the labor force suggest that there are between men and women major differences in those characteristics that lead to participation in the wage economy. Among Inupiat males, being head of a family is the factor most strongly related to labor force participation (Table 13). Preservice vocational education is also related to higher labor force participation, but it only makes a significant difference if the man is a family head. A North Slope Inupiat male who is not a family head and has not received vocational education is in the labor force less than half a year, an average of 5.1 months. A North Slope Inupiat male who is a family head and has vocational training is in the labor force almost twice as much, an average of 9.4 months.

Most other background or personal characteristics measured in the survey have little effect on male labor force participation—numbers of dependents, the availability of transfer payments in the households,

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[43] United Nations International Labor Office, *1977 Year Book of Labor Statistics*; Eli Ginzberg, *Manpower for Development: Perspectives on Five Continents*, New York: Praeger, 1971; Nadia Youssef, *Women and Work in Developing Societies*, University of California, Berkeley, Population Monograph Series No. 15, 1974.

[44] We do not deal with Inupiat participation in the subsistence economy in detail because it is the subject of another monograph in this series.

Table 12

Annual Effort that North Slope Inupiat Adults Spent on Subsistence, by Sex and Age: 1977[a]
(Percentage Distribution)

Annual Effort on Subsistence	Age 18-24	25-34	35-44	45-54	Total
Males					
None	17%	22%	25%	32%	23%
Low	28	28	30	22	28
Medium	28	23	34	16	26
High	27	27	11	30	23
Total	100%	100%	100%	100%	100%
Average Annual Effort[b]	5.7	5.6	4.5	5.8	5.4
(Respondents)	(24)	(50)	(37)	(19)	(130)
Females					
None	41%	36%	44%	32%	39%
Low	46	35	20	49	36
Medium	8	19	23		14
High	5	10	13	19	11
Total	100%	100%	100%	100%	100%
Average Annual Effort[b]	1.8	3.3	3.7	3.8	3.1
(Respondents)	(26)	(38)	(29)	(16)	(109)

[a]See Appendix for a discussion of the construction of this subsistence index.

[b]Averages were computed on ungrouped data. An average of 5.4, for instance, indicates medium effort was spent doing subsistence, while an average of 3.1 indicates low effort.

Significance and Association

Males: $\cdot \frac{2}{9} = 6.13$, n.s.

Females: $\cdot \frac{2}{9} = 11.60$, n.s.

Source: ISER North Slope Survey, 1977.

ethnicity, parents' work patterns, etc. (Table 14). A higher general level of education is also associated with a higher male labor force participation, but historical trends do not suggest that increased education leads to increased male labor force participation. Educational levels have dramatically increased on the North Slope for both men and women, rising from a median of 3.7 grades completed in 1960 to 8.8 grades completed in 1977 for adults 25 or above.[45] Yet, male labor force participation does not seem to have increased during this period.

[45]Kruse, et al., *Energy Development and the North Slope Inupiat . . .*, Table 3-7.

Marriage and the responsibility for supporting a family, however, may well be a central causal factor pushing Inupiat men into the cash economy. The relationship between marriage and labor force participation may have other interpretations. For example, Inupiat women may prefer to marry men whom they see as good providers in the wage economy. Our ethnographic interviews, however, suggest that marriage may well change attitudes toward wage work. One young man said, "before I started this job, I decided to keep it as long as I can—then I'll be doing my hunting every chance I get. One of the reasons was I got married. . . ."

Table 13

Effect of Preservice Job Training on Labor Force Participation of North Slope Inupiat Males, 18-54, by Heads of Families: 1977
(All Families)

Males	Statistical Characteristics*				
	Average Months LFP	Standard Error	Number of Respondents	Mann-Whitney Statistic	Level of Significance
Heads of Families					
Have preservice	9.4	+/- 0.68	(27)	358.0	.001
No Preservice	6.0	+/- 0.64	(46)		
Non-Heads of Families					
Have preservice	6.0	+/- 1.10	(15)	132.5	n.s.
No preservice	5.1	+/- 1.11	(21)		
All Males in Families					
Heads of Families	7.3	+/- 0.52	(73)	948.0	.02
Non-Heads of Families	5.4	+/- 0.79	(34)		

*Although the Mann-Whitney statistical test is computed on the mean rank within groups, the average number of months Inupiat males worked for wages or wanted a job is reported since this average is more informative than a distributional rank mean would be. Further, the standard error has not been adjusted and presently represents the 68 percent level of certainty. Data users should adjust this statistic to their own desired higher level of confidence.

Source: ISER North Slope Survey, 1977.

In examining the work adaptations of urban Native men, Jones similarly found that marriage was related to more stable work histories.[46] She suggests that marriage is important not only because it brings financial responsibilities but also because it provides an important source of emotional support to men in dealing with job stresses.

The other factor strongly related to Inupiat male labor force participation, particularly for heads of families, is preservice vocational training. Vocational education seems to be especially important to men during an economic downturn. During the winter of 1976 when CIP projects were cut back, Inupiat male heads of families who had vocational training were in the labor force almost twice as long as heads of families without such training . Even in periods of job abundance, such as the following summer construction boom, vocational education still remained important.

The positive relationship between vocational education and labor force participation is not necessarily causal. Inupiat men who are more oriented to the wage economy may seek out both vocational education and employment. However, vocational education may well contribute to higher labor force participation. It increases job skills that give men an advantage in the labor market, especially in times of job cut-back. Vocational training may also decrease voluntary withdrawals from the labor force by providing socialization into the routines and expectations of the workplace.

Among Inupiat women, the characteristic strongly related to labor force participation is English language preference.[47] Village women who preferred to respond to the survey interview in Inupiat were in the labor force on the average less than a month (Table 15). Village women who preferred to respond in English were in the labor force over eight times as much, an average of 6.7 months. Surprisingly, women living in the villages who spoke English were in the labor force almost as much as women living in Barrow, despite Barrow's greater job opportunities. If speaking English in the interview is fundamentally a measure of English language competency, the greater

[46] Dorothy M. Jones, *Urban Native Men and Women -Differences in Their Work Adaptations.* ISEGR Occasional Paper No. 12. University of Alaska: Institute of Social, Economic and Government Research, 1976.

[47] We are well aware that language preference is a complex issue and differs with the situation. The language measure used in this survey was whether the person preferred to answer interview questions in English or Inupiat. We view this measure primarily as an index of English skills. Since the interviewer was Inupiat, political issues involved in language choice were probably less salient.

Table 14

Relationship of Skill Levels and Other Individual Characteristics to the Labor Force Participation of North Slope Inupiat, 18-54, by Sex[a]: 1977

Characteristics	Male Labor Force Participation	Female Labor Force Participation
Education and Skills		
English Language Preference	.11	.47[b]
Educational Level	.20[c]	.31[b]
Preservice Vocational Training	.25[b]	.03[d]
Experience Working Outside Barrow	.12[c]	.28[b]
Personal Situation		
Head of Household	.19[c]	.03
Marital Status	.15[c]	.06
Age Level	.02	−.20[c]
Number of Dependents	.08	−.16[c]
Number of Children under 18	.06	−.19[c]
Availability of Transfer Payments to Household Members		
Old Age Programs	−.06	.02
Other Sources	−.02	−.15
Total Employment of Other Household Members	.04	.12
Living in Barrow	.10	.25[b]
Background Influences		
Father's Influence		
Whether Father Worked Primarily at a Wage Job	.10	.19[c]
Level of Education	.15	.09
Ethnicity	.05	−.09
Mother's Influence		
Whether Mother Worked for Wages	−.01	−.03
Level of Education	.19[c]	.02
Ethnicity	.10	−.02
Grew up in Barrow	.07	.18[c]
(Respondents)	(129)	(108)

[a]Spearman's *Rho* has been used to measure association since the variable "months in labor force" is not normally distributed.

[b]Significant difference at the 99 percent level of certainty.

[c]Significant difference at the 95 percent level of certainty.

[d]Few women have received preservice vocational training. This limitation reduces the possibility of a high correlation.

Source: ISER North Slope Survey, 1977.

relationship of language preference and labor force participation among Inupiat women is understandable. English skills are a prerequisite to the clerical, paraprofessional, and service jobs most women hold. Inupiat men, in contrast, are concentrated in blue-collar jobs where English language competency is less important.

The experience of having worked outside Barrow for three months or more was also related to higher female labor force participation, even with language preference controlled. Inupiat women with such experience were in the labor force an average of 3.1 months more than women who had never worked outside the North Slope (Table 15). Working at a paid job outside the North Slope may be a socializing experience which increases women's attachment to the labor force. Alternatively, women who are more oriented toward wage work in the first place may seek out employment both on and off the North Slope.

While other personal characteristics are statistically related to labor force participation among women, most of these relationships disappear when language preference is controlled. However, there remains a tendency for women with postsecondary education to have higher rates of labor force participation. Women with fewer children also tend to spend slightly more time in the labor force. While neither of these relationships reach statistical significance, the trend is clear and corresponds to national patterns of female labor force participation.[48]

Do demographic trends among the North Slope Inupiat suggest that those factors related to higher labor force participation are increasing and thus that labor force participation itself may increase? For women, this situation appears to be occurring. Family size is decreasing.[49] Postsecondary educational achievement is rising.[50] Young women are more likely to have work experience outside the North Slope, and more young women prefer to speak English. For men, the situation is not as straightforward. While vocational education is higher among the younger generation, the central factor, marriage rate, appears to have declined. In 1960, about 40 percent of Inupiat men 18 or over were unmarried, compared to 50 percent in 1977 (Table 10). As a comparison point, about 29 percent of U.S. white males in this age range were unmarried in 1977.[51] In sum, demographic shifts suggest that Inupiat female labor force participation is likely to increase in the future, but they do not have such an implication for men.

[48]U.S. Department of Commerce, Bureau of the Census. *A Statistical Portrait of Women in the United States.* Current Population Reports, Special Studies, No. 58, April 1976.

[49]Kruse, et al., *Energy Development and the North Slope Inupiat . . .*, Table 3-5.

[50]*Ibid.*, Table 3-7.

[51]"Marital Status and Living Arrangements, March 1978," *Current Population Reports*, Series P-20, No. 338, U.S. Bureau of the Census. Washington, D.C., Government Printing Office, 1979.

Occupational Structure of Inupiat Men and Women Since 1960

The North Slope Borough has created large numbers of government and construction jobs and has initiated strong local hire policies. The types of occupations held by Inupiat men and women reflect this particular job structure. Nonetheless, comparisons of North Slope Inupiat occupations with national patterns are useful in pointing out the types of skills this opportunity structure is developing in the Inupiat population. Inupiat men (80 percent) are concentrated in blue-collar work (Table 16). Over 30 percent of the male work force are unskilled laborers, a substantially greater proportion than white or black men nationally. Those Inupiat men who hold higher skilled positions are concentrated much more in crafts (30 percent) than in professional/managerial fields (12 percent). The proportion of Inupiat men in the skilled crafts is somewhat higher than among white men and significantly higher than among blacks.

In examining the occupational structure of Inupiat women, we have added "paraprofessional workers" as an additional category of white collar work. Such jobs as health aide and teacher aide are usually classified as service work. However, in isolated villages, where outside professionals often depend on local paraprofessionals to overcome cross-cultural problems, these positions require unusual judgment and professional skills. Rural health aides, for example, are trained to deliver medical services without a doctor or other professional immediately available. Paraprofessional work is a major occupational area for Inupiat women, and, in our view, this change more closely reflects the occupational situation in rural Alaska than conventional national categories.

Despite their recent entrance into the wage economy, Inupiat women (75 percent) are concentrated in white-collar work (Table 17). Seventeen percent of Inupiat women held professional and managerial positions in 1977, about as great a proportion as black women (18 percent) and almost as high a proportion as whites (23 percent). An additional 26 percent of the Inupiat female work force worked as paraprofessionals.

To determine whether the borough's local hire and advancement policies had led to individual occupational mobility, the survey asked the respondents, "What type of job, if any, did you spend most time on in 1970?" Occupational comparisons between 1970 and 1977 show no significant increase in skilled work for either men or women.[52]

The time interval between 1970 and 1977 is a short period in which to examine occupational change. Even between 1960 and 1977, however, only minor shifts occurred in the occupational structure of Inupiat men. The proportion of Inupiat men in professional/managerial positions increased from 2 percent in 1960 to 12 percent in 1977. The predom-

[52] These comparisons were also made for the same individual with similar results.

Table 15

Relationships of Residence, Language Preference, and Outside Work Experience to Labor Force Participation of North Slope Inupiat Females, 18-54, by Residence

	Statistical Characteristics				
	Average Months LFP	Standard Error	Number of Respondents	Mann-Whitney Statistic	Level of Significance
Barrow Residence					
Preference for English	7.3	+/- 0.74	(41)	33.5	n.s.
No Preference for English	–	–	(2)		
Non-Barrow Residence					
Preference for English	6.7	+/- 0.82	(40)	174.0	.0001
No Preference for English	0.8	+/- 0.41	(24)		
Preference for English					
Worked Outside Region three months or more	9.5	+/- 0.88	(64)	302	.02
Did not work outside region three months or more	6.4	+/- 0.64	(14)		

Source: ISER North Slope Survey, 1977.

Table 16

Occupations of North Slope Inupiat Males, 18 or Over, Compared to National Norms: 1977

Occupation	Ethnicity			Occupational Ratio	
	White	Black	Inupiat[a]	Inupiat/White	Inupiat/Black
Total White Collar	(44)	(27)	(19)	.43[b]	.70
Professional-Mgr.	31	17	12	.39[b]	.71
Paraprofessional[c]			1		
Clerical-Sales	13	10	6	.46[b]	.60
Total Blue Collar	(52)	(70)	(81)	1.56[b]	1.16[b]
Trades	22	16	29	1.32	1.81[b]
Operatives	17	24	14	.82	.58[b]
Laborers	6	14	31	5.17[b]	2.21[b]
Service	7	16	7	1.00	.44[b]
Total Farm	(4)	(3)	–	–	
Total Percent	100	100	100		
Total Males	(46,723)	(5,077)	(112)		

[a]Based on longest job held, October 1976-September 1977.

[b]Significant difference at the 95 percent level of certainty.

[c]Paraprofessionals include teacher's aides, nurse's aides, and other paramedical workers.

Source: U.S. Bureau of Labor Statistics, *Employment and Earnings*, January 1979; ISER North Slope Survey, 1977.

Table 17

Occupations of North Slope Inupiat Females, 18 or Over, Compared to National Norms: 1977

Occupation	Ethnicity			Occupational Ratio	
	White	Black	Inupiat[a]	Inupiat/White	Inupiat/Black
Total White Collar	(67)	(47)	(75)	1.12	1.60[b]
Professional-Mgr.	23	18	17	.74	.94
Paraprofessional[c]	2	2	26	13.00[b]	13.00[b]
Clerical-Sales	42	27	32	.76[b]	1.19
Total Blue Collar	(32)	(52)	(25)	.78	.48[b]
Trades	2	1	–	–	–
Operatives	12	16	4	.33[b]	.25
Laborers	1	1	1	1.00	1.00
Service	17	34	20	1.18	.59[b]
Total Farm	(1)	(1)	–	–	–
Total Percent	100	100	100		
Total Females	(30,644)	(4,321)	(60)		

[a]Based on longest job held, October 1976-September 1977.

[b]Significant difference at the 95 percent level of certainty.

[c]Paraprofessionals include teacher's aides, nurse's aides, and other paramedical workers.

Source: U.S. Bureau of Labor Statistics, *Employment and Earnings*, January 1979; ISER North Slope Survey, 1977.

inant occupational structure of Inupiat men was little different in 1977 than in 1960. Most Inupiat men are concentrated in blue collar work with about equal proportions in skilled and unskilled areas.

Between 1960 and 1977, however, major changes occurred in the occupational structure of Inupiat women. In 1960, most Inupiat women (81 percent) were service workers. In 1977, most were white collar workers (75 percent). In 1960, a negligible proportion of Inupiat women were professional workers. In 1977, 17 percent of the Inupiat female labor force were employed in professional/managerial positions.[53] Since the borough sometimes placed Inupiat employees in "trainee" positions in jobs for which they had not yet met conventional skill requirements, the skill level implied by these statistics may be overstated. What is surprising is the lack of pronounced occupational mobility, despite borough local-hire and advancement policies.

Inupiat Business Activity During the North Slope Borough Boom

An interesting aspect of the Inupiat occupational structure on the North Slope is the low level of self-employment in business. Despite the large amount of cash flowing into the North Slope economy and the increasing population,[54] fewer than 1 percent of the Inupiat surveyed were operating a business. A North Slope Borough staff member pointed out:

> There is little (Inupiat) entrepreneurship. We're trying to get people to go into business. The Whites are coming in now that there is money and they're making money. There's no movie theater in Barrow, just a few restaurants, a couple of stores. Almost everything is White-owned. There is a (——) business in the hands of a Native but he's trying to get the Borough to take it over. There's competition from the Borough system.

Cultural factors may in large part explain this situation. A study of Native entrepreneurship in Canada discusses some of the problems Natives face in operating a business:

> Community pressure (especially from relatives) to provide personal favors (use of equipment, free services, extending credit, etc.) is a serious problem, especially when compounded by strong family loyalties, a tradition of sharing, and a general lack of understanding of commercial activities (e.g. if a store manager has a store and warehouse full of merchandise, he must be very wealthy). . . .
>
> Community reaction—envy, hostility, ostracism, sometimes willful damage or physical violence—may create serious problems for an entrepreneur, sometimes killing the venture. There is a suspicion that the anticipation of such unfavorable community reactions may prevent many would-be entrepreneurs from establishing a business in the first place.[55]

Cultural factors, however, may not be the entire explanation. Inupiat entrepreneurship has occurred in earlier historical periods. According to Sonnenfeld, the increased cash circulating through Barrow during the ARCON boom (1946-1953) led to the "development of village businesses and of Eskimo businessmen."[56] In addition to the Native store, fostered by the Alaska Native Service:

> Other stores, also Native-run were established during the ARCON period to take their share of the increased village income. By 1951, there were five general stores, two coffee shops, one dance hall, two picture theaters, and one beauty shop.[57]

These businesses, Sonnenfeld claims, succeeded in capturing over two-thirds of the village income.[58]

Inupiat entrepreneurship also developed during the commercial whaling period at the end of the 19th century, as well as during the fur trapping boom of the 1920s. Some Inupiat whaling captains expanded their traditional activities, following the business model established by the white shore-station whalers. They invested in supplies to pay their crew, used warehouses to store the goods, supported as many as six whaling crews, and sold the product.[59] During the fur trapping boom, Sonnenfeld points out, "a few of the Eskimo had become entrepreneurs in their own right and could bid effectively for the Native trade."[60]

Studies of entrepreneurship in developing countries suggest that economic opportunity stimulates business growth despite apparent cultural constraints. Reviewing numerous studies documenting the abundance of entrepreneurial activities in societies considered unfavorable to business development, Leff notes that the problem of how to over-

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[53] Occupational comparisons between age groups result in small sample sizes. Nonetheless, it is of interest that 39 percent of Inupiat women in the 25-34 age group (n=25) were professional workers in 1977.

[54] Kruse, et al., *Energy Development and the North Slope Inupiat* . . ., Tables 3-1 and 4-1.

[55] John Beveridge and C. Roger Schindela, *Native Entrepreneurship in Northern Canada: An Examination of Alternative Approaches* (Saskatoon, Canada: University of Saskatchewan, Institute for Northern Studies, 1978), pp. 18-19.

[56] Sonnenfeld, *Changes in Subsistence* . . . , 1957, p. 557.

[57] *Ibid.*, p. 559.

[58] *Ibid.*, p. 559.

[59] *Ibid.*, p. 557.

[60] *Ibid.*, p. 323.

come socio-cultural rigidities in order to stimulate entrepreneurship has virtually disappeared from the professional literature.[61]

In explaining the low incidence of Inupiat entrepreneurship during the North Slope boom, factors other than cultural attitudes toward business may well be important. The Arctic Slope Regional Corporation and the village corporations established under the Alaska Native Land Claims Settlement Act have been active in establishing North Slope business enterprises, such as a fuel distributorship, light duty and heavy duty mechanical shops, and joint venture construction companies. The Native corporations may have pre-empted significant business opportunities. In addition, North Slope Inupiat with business and management skills are likely to find attractive opportunities in Borough and Native corporation employment which do not pose the risks of business ventures.

CONCLUSION

Through its local-hire program, the North Slope Borough has used its tax revenues to bring significant benefits to the general Inupiat population. The borough has provided at least some employment for over half the Inupiat adult population. Borough jobs have been especially important in helping to absorb the growing population of young Inupiat adults into the labor force. The borough has not succeeded in eliminating Inupiat unemployment, but the situation is far better than it would have been without the borough's formation. During the period of borough activity, cash income levels of the Inupiat population have substantially risen without increasing income inequity.

The North Slope Borough has not only emphasized local hire but also has sought to adapt work requirements to contemporary Inupiat lifestyles through such policies as subsistence leave. In this culturally adapted job situation, the labor force behavior of Inupiat women, particularly young women, parallels national patterns. Inupiat women are concentrated in white-collar work, and their rate of labor force participation approximates national norms. Since the 1960s, Inupiat women have surged into the work force and have increasingly entered skilled work. Demographic trends, such as rising female educational levels and smaller family size, suggest this pattern of high and rising female labor force participation will persist.

Inupiat men, in contrast, have developed a culturally different pattern of economic activity. North Slope Inupiat men, much more than men nationally, are concentrated in intermittent blue-collar work. Among younger as well as older men, labor force participation rates in the wage economy are substantially below national norms. However, Inupiat men in all age groups also participate substantially in the subsistence economy. Historical trends, age comparisons, demographic trends, and life-style preferences of male adults and high school students suggest that Inupiat men will maintain this dual pattern of economic activity in the future rather than shift strongly into the wage economy. The high-paying construction work which the borough offers makes it possible for men to follow this life-style preference without severe loss of cash income. However, the preference of many Inupiat men for a part-year work pattern also limits the borough's ability to use jobs as a mechanism for transferring oil revenues to the Inupiat population.

The Borough's Ability to Create Future Jobs

Current Inupiat employment on the North Slope is largely public employment, created by the North Slope Borough as it transforms tax revenues into jobs. As long as substantial Prudhoe Bay tax revenues continue, North Slope Inupiats can continue to enjoy high-paying, local employment harmonious with contemporary life styles. Current North Slope Borough revenue projections anticipate a stable property tax base through 1993.[62] Prudhoe Bay revenues are expected to persist at least through the turn of the century, and oil and gas development in other North Slope areas, such as the National Petroleum Reserve and the Outer Continental Shelf, may maintain the borough's tax base. However, oil revenues have not led to the growth of a diversified self-sustaining economy. Energy development has created serious dependence on the part of both Inupiat individuals and the borough government on an unstable, non-renewable resource.

If an economic downturn occurs, Inupiat men may be hurt more than Inupiat women. Events in the winter of 1977 illustrate this possibility. Due to an unresolved lawsuit about its level of taxing authority (since settled in the borough's favor), the borough reduced its spending, cutting back both on general government and on CIP projects. This economic downturn affected Inupiat men far more than Inupiat women. The level of employment of Inupiat women during the bad winter of 1976 was not significantly

[61] Nathaniel H. Leff, "Entrepreneurship and Economic Development: The Problem Revisited," *Journal of Economic Literature*, 17, 1979, pp. 46-64, 53.

[62] Attachment A to Appendix A, North Slope Borough CIP Ordinance 80-10B, Table A6, "Projection of Property Tax Base—North Slope Borough," p. A-15.

different from employment during the following summer boom. In contrast, Inupiat male employment dropped substantially during the downturn.

This situation occurred in 1977 because of the concentration of men in high-paying but temporary construction work. The women tend to hold lower-paying but more secure white-collar jobs. Their median wages are only about 60 percent of men's wages. However, over 50 percent of the women 18-54 had worked for 40 weeks or more at the same job compared to only 28 percent of men. Either having a white-collar job or working at a skilled blue-collar job significantly increases the employment of Inupiat men. Only about half the male work force, however, are in these categories.

In short, so long as borough revenues remain high, both Inupiat men and women are likely to enjoy good employment prospects. This favorable situation seems the most likely. However, if a dislocation does occur, women could be in a somewhat more advantageous position. Inupiat women are concentrated in clerical, paraprofessional, and other white-collar jobs which are common in other regions of rural Alaska. In other areas, these jobs are financed through Native nonprofit corporations, regional school districts, and state and federal agencies rather than a borough government.

Effects of the Economic Incentive Structure on Educational Achievement

In the current North Slope economy, Inupiat women, much more than men, have financial incentives for educational achievement. Inupiat women who obtain a high school education or above earn over one and a half times the weekly wages of women who are not high school graduates (Table 18). For men, completing high school makes no difference to weekly wages, given the high pay levels of unskilled construction work. Even in terms of annual earnings, completing high school results in only a 27-percent increase in men's earnings for the additional months worked. If unemployment compensation is taken into account, this income difference would decline further. Women with a high school education, in contrast, earned over twice as much annually as women who were not high school graduates.

These differences in economic incentives may be an important influence on male and female levels of educational motivation. Among Inupiat adults over 25, 8 percent of the women had a 4-year baccalaureate degree compared to only 1 percent of the men. In the youngest age group (18-24 years), it is the women who have slightly higher rates of educational achievement, more employment experience, and more experience either in school or working outside the North Slope.[63] In interpreting this trend, it is important to keep in mind the small sample in this age group and also the possibility of sex differences in the ages when men and women reach maturity. However, it is economically rational for a young man growing up on the North Slope (but not for a young woman) to minimize school and work in construction.

Jobs themselves also function as "schools," teaching not only information and skills but also attitudes and values.[64] In a study of Eskimo male and female work roles in Canada, McElroy points out that the white-collar jobs held by Eskimo women led to substantially more nonformal education than the blue-collar jobs held by Eskimo men.[65] Eskimo women's jobs tended to place them in close working relationships with professional supervisors who viewed their role explicitly as training Eskimo employees. Construction contractors, who employed Eskimo men, in contrast, saw their role as "just getting a job done, not trying to educate the Eskimos."[66] Similar processes may be occurring on the North Slope. Half of the North Slope leaders interviewed in a study of North Slope government were dissatisfied with the on-the-job training Inupiat construction workers received.[67] They saw the CIP's construction management system as failing to provide work skills that would make workers employable in other jobs. There was more satisfaction with the on-the-job training occurring in white-collar managerial and technical work.

An ideal of the North Slope Borough is to increase self-sufficiency by raising educational levels and thus reducing dependence on imported professionals and other skilled workers.[68] Yet, the current economic incentive structure may be thwarting attainment of this objective, especially for the large proportion of Inupiat men in blue-collar work. Two important goals of the North Slope Borough may intrinsically conflict—that of distributing high-paying

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[63] Kruse, et al., *Energy Development and the North Slope Inupiat . . .*, Table 3-6 and 3-8.

[64] The seminal work in this area has been done by Alex Inkeles, "Making Men Modern: On the Causes and Consequences of Individual Change in Six Developing Countries," *American Journal of Sociology*, 75:2 (1969), pp. 208-225.

[65] Ann McElroy, *Alternatives in Modernization: Styles and Strategies in the Acculturative Behavior of Baffin Island Inuit*, Vol. III (New Haven, Connecticut: Human Relations Area Files, 1977), p.

[66] *Ibid.*, p. 340.

[67] *North Slope Borough Government and Policy-Making*

[68] *Annual Overall Economic Development Program, Report and Projection*, North Slope Borough, July 1980.

Table 18

Effect of Education on Weekly and Annual Wages of North Slope Inupiat, 18-54, by Sex: 1977

Effects of Education	Statistical Characteristics			
	Median Wage	Number of Respondents	Mann-Whitney Statistic	Level of Significance
WEEKLY WAGE				
Females				
Less than High School	$ 190	(27)	224	.05
High School or Above	300	(23)		
Males				
Less than High School	499	(35)	632	n.s.
High School or Above	479	(38)		
ANNUAL WAGE				
Females				
Less than High School	7,606	(29)	250	.025
High School or Above	15,574	(25)		
Males				
Less than High School	12,587	(36)	586	.025
High School or Above	15,932	(44)		

Source: ISER North Slope Survey, 1977.

jobs to the general population versus creating economic incentives for educational achievement and skill development.

Increasing Importance of the Economic Role of Inupiat Women

In the traditional subsistence culture, men were the major economic providers. Women's food-gathering activities, such as fishing, berry picking, and hunting small animals, were primarily supplemental.[69] Inupiat women occasionally hunted large animals and participated in whaling, but these activities were unusual and remarked upon. Women were primarily responsible for the routine work of the household—scraping, chewing, and sewing skins; preparing the food; and caring for the children.

The development of the wage economy has substantially changed the economic role of Inupiat women. In the current North Slope Borough economy, women have become important economic providers for the household. Women's wages are not only a significant source of income for household expenses, but they help to finance household activities in the subsistence sector. Increased female wage employment in Inupiat households allows other household members to spend more time on subsistence activities (Table 19). This in turn results in greater contributions of subsistence foods to other Inupiat households. Women's work in the wage economy, in short, helps the household to maintain subsistence activity and prestige in the subsistence economy.

The North Slope experience suggests that Inupiat men and women may be choosing to adapt in somewhat different ways to majority culture institutions such as wage employment. Men and women are entering different types of occupational structures, which offer disparate educational incentives and work socialization experiences. Men have developed a complex pattern of activity in both the wage and subsistence economies. Women focus their economic effort more toward the wage economy, but their wages help the household to maintain effort in the subsistence economy. The North Slope Inupiat, especially the men, have not adopted the work behavior of the majority culture even when good job opportunities have been plentiful. Instead, Inupiat men and Inupiat households have developed a bicultural pattern of economic activity.

[69] Naomi M. Giffen, *The Roles of Men and Women in Eskimo Culture* (Chicago: The University of Chicago Press, 1980), p. 74.

Table 19

Relationships Between Employment and Household Subsistence
Among North Slope Inupiat Females, 18-54,
with English Language Preference

Household subsistence	Months Employed
Proportion of Subsistence Food Used	.16
Amount of Subsistence Food Given Away	.36*
Months Household Members Engaged in Subsistence	.29*
(Total Respondents)	(81)

*Significant at the 99 percent level of certainty.

Source: ISER North Slope Survey, 1977.

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